

**REGIONAL COMMUNICATIONS PLAN  
STATE OF KANSAS**

**4.9 GHZ  
REGION 16 (KANSAS)**

**MAY 12, 2005**

**REGION 16 (KANSAS)**  
**Regional Communications Plan**

# **REGION 16 (KANSAS)**

## **Regional Communications Plan**

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### **EXECUTIVE SUMMARY**

In 1993, the U.S. Congress directed the Federal Communications Commission (FCC) to develop a framework, which would ensure that the communications requirements for public safety throughout this country would be met through the year 2010. The Commission set into motion a process that has resulted in the allocation of an additional 50 MHz of bandwidth in the 4.9 GHz frequency spectrum for utilization by public safety. The newly allocated frequency spectrum is now available for use by public safety agencies in Region 16 (Kansas). The initial meeting of the Region 16 (Kansas) Regional Planning Committee for 4.9 GHz was held in Salina, KS on September 23, 2003 for the purpose of providing information to attendees of recent developments concerning this frequency spectrum and to start the process for the development of a Regional Communications Plan.

This document consists of the Regional Communications Plan, which has been developed as a guideline for the shared utilization of 4.9 GHz frequencies by eligible entities in Region 16 (Kansas). The intent of this plan is to provide assistance and guidelines for the shared usage of channels in the 4940 to 4990 MHz frequency spectrum to eligible entities within Region 16 (Kansas).

Upon approval by the FCC of this document, the Region 16 (Kansas) Regional Planning Committee (RPC) will assist the public safety community within Region 16 (Kansas) to select channels that meet their business needs while attempting to reduce the risk of interference to other users in this 50 MHz of frequency spectrum. Assistance will be provided to the public safety community to help resolve any inter-regional disputes that may arise and to ensure that radio astronomy operations within the region are properly protected.

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The authorization document for this Regional Communications Plan is the Federal Communications Commission WT Docket No. 00-32, adopted by the Commission on February 14, 2002. This plan in conjunction with WT Docket No. 00-32 addresses technical, procedural, and operational considerations by eligible entities for the utilization of the 4.9 GHz channels. Additionally, WT Docket No. 00-32 provides the Region 16 (Kansas) Regional Planning Committee with the opportunity to perform the tasks discussed in this document if the Federal Communications Commission approves the plan.

### **SECTION 1: REGIONAL CHAIRPERSON**

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### **SECTION 2. RPC MEMBERSHIP**

The committee membership for Region 16 (Kansas) consists of members from both the public safety and the public service environment. Members include representatives from local government, state government, law enforcement and emergency medical services. A complete listing of participating Regional Planning Committee members for Region 16 (Kansas) is located in Appendix A of this document.

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### **SECTION 3. DESCRIPTION OF THE REGION**

Region 16 encompasses the entire State of Kansas. Within the boundaries of Kansas there are approximately 82,282 square miles that are divided into 105 counties bordered by four states in addition to one other state within close proximity. These states are identified as the following:

Region 07: Colorado

Region 25: Missouri

Region 26: Nebraska

Region 34: Oklahoma

Region 52: Texas-Lubbock

The State of Kansas (Region 16) has a population of almost 2.7 million people with the largest majority of residents living in the eastern portion of the state. The eastern counties of Wyandotte, Douglas, Johnson, Leavenworth and Shawnee consist of approximately 35.2 % of the states population. In central and south central Kansas the counties of Butler, Ellis, Harvey, Saline and Sedgwick account for another large portion of Kansas residents with almost 25.7 % of the states population. Additionally, in southwestern Kansas the counties of Finney and Ford account for 2.7 % of the states population.

There is a complete alphabetical listing of all counties and major metropolitan areas within the State of Kansas listed in Appendix B of this document. Additionally, refer to the map in Appendix C of this document for locations of counties in Region 16 (Kansas) and to Appendix D for the latest census data information per county within Region 16 (Kansas).

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### **SECTION 4. REGIONAL PLAN SUMMARY**

Allocation of the 4.9 GHz frequency spectrum will be implemented as directed by the Federal Communications Commission. The full amount of frequency spectrum ranging from 4940 through 4990 MHz will be available for licensing within the jurisdictional boundaries of any public safety entity. The utilization of this spectrum is on a shared basis and no single entity will have exclusive ownership within their operational area. It will be the responsibility of the RPC to provide information to the applicant on any usage of this spectrum within their area of operations and to assist them in minimizing conflicts that may arise from interference. The following channel assignments are authorized for usage in the 4940 – 4990 MHz frequency assignment as published by the Federal Communications Commission in §90.1213:

*Band Plan* – The following channel center frequencies are permitted to be aggregated for channel bandwidths of 5, 10, 15, or 20 MHz. Channel numbers 1 through 5 and 15 through 18 are 1 MHz channels and channel numbers 6 through 14 are 5 MHz channels.

Center <u>Frequency (MHz)</u>	Channel <u>Nos.</u>
4940.5	1
4941.5	2
4942.5	3
4943.5	4
4944.5	5
4947.5	6
4952.5	7

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4957.5	8
4962.5	9
4967.5	10
4972.5	11
4977.5	12
4982.5	13
4985.5	14
4986.5	15
4987.5	16
4988.5	17
4989.5	18

Although applications are currently being accepted by the Federal Communications Commission for use of this frequency spectrum, upon notification that the Region 16 (Kansas) Regional Plan has been approved, the RPC will make every effort to notify all interested public safety entities within the region, that assistance is available from the RPC to help in their selection of channels for applications in the 4940 through 4990 MHz frequency spectrum. It is recognized by the RPC that many different applications will be utilized by the public safety community in the 4.9 GHz frequency spectrum. These applications include items such as Personal Local Area Networks (PLAN), Vehicular Local Area Networks (VLAN), “hotspots” for downloading large files and video in strategic areas, and fixed point-to-point systems. In an effort to stay abreast of the various applications being utilized the RPC will utilize the “Computer Aided Pre-Coordination Resource and Database System” (CAPRAD) developed by the National Law Enforcement and Corrections Technology Center for the new 700 MHz public



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safety frequency spectrum to input data for those entities building systems and requesting frequency assignments. Although, the CAPRAD system is not currently designed to support channels utilized by public safety in the 4940 through 4990 MHz frequency spectrum it would be considered beneficial by the Region 16 (Kansas) RPC to have this functionality included in the system. This functionality would allow regions to provide the proper notification to adjacent regions of any proposed plan changes and spectrum usage that will affect them. It is anticipated the RPC will be used primarily for two purposes, the first being in which interested users of the 4.9 GHz frequency spectrum may locate contact information of systems already installed in an effort to share resources for interoperability purposes. The second purpose will be the availability of system information to eligible users as a method to avoid interference issues both inter-regional and intra-regional. The RPC believes that concurrence with established standards developed in the 700 MHz frequency database would benefit the administration of the 4.9 GHz frequency spectrum. This will allow both the RPC and frequency coordinators to maintain current data by updating the database when licenses are granted or canceled and/or allotments/allocations changed. Utilization of the NLECTC/CAPRAD database allows both the Region 16 (Kansas) RPC and adjacent Region(s)' RPC chairman (where a Region has formed) to review channel requests for the purpose of preventing interference and maximizing spectrum usage for interoperability purposes.

The Region 16 (Kansas) RPC recognizes that public safety entities within the State of Kansas require effective command, control, coordination, communication and sharing of information with numerous criminal justice and public safety agencies during emergency situations. Numerous incidents that occur annually require some form of mutual aid and coordinated response. Increases in the

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severity of an incident, requires a greater need for interoperable communications from the public safety community. Unfortunately, Region 16 (Kansas) has not completed a comprehensive interoperability plan that is accepted by all parties and capable of providing the public safety community the communications necessary at an incident.

Within Region 16 (Kansas) a large variety of public safety agencies exist that have jurisdiction in localized areas or throughout the State of Kansas and provide service and protection to all residents. These include the following agencies:

*Federal Agencies:* Federal Bureau of Investigation, Drug Enforcement Administration, Bureau of Alcohol, Tobacco, and Firearms, Housing and Urban Development, United States Marshall Service, and other agencies plus large military reservations.

*State Agencies:* Agencies include Kansas Bureau of Investigation, Kansas Highway Patrol, Kansas Department of Corrections, Kansas Department of Emergency Management, plus various other agencies.

*Tribal Lands:* Region 16 (Kansas) currently has established tribal lands with associated political divisions.

*County Agencies:* Primarily consists of the 105 county law enforcement agencies, rural fire and EMS departments, local emergency management agencies, and other public works and public health entities.

*Municipalities:* Include local law enforcement agencies, fire departments, emergency medical services, local civil defense, and public works.

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Although, a statewide interoperability plan does not exist within Region 16 (Kansas) to aid the various entities described above, the Regional Planning Committee (RPC) recognizes the necessity for a plan to be established and implemented to meet the needs of Kansans during emergency situations as well as normal daily occurrences. The State of Kansas is subject to a variety of potential incidents including, natural disasters (floods, tornadoes, ice storms, range fires, etc.), radiological incidents, terrorist activities, agricultural-terrorism, and natural or manmade biological incidents. It is the intentions of the RPC to submit a modified regional plan to the Chief, Wireless Telecommunications Bureau upon completion and acceptance of an interoperability plan that meets the requirements public safety entities within Region 16 (Kansas). In addition, this plan will incorporate the National Incident Management Plan and the corresponding Incident Command System (ICS) for incident management within the region.

The notification process utilized by the Regional Planning Committee is to inform all eligible entities of the 4.9 GHz frequency spectrum for public safety included a variety of methods. These methods included Federal Communication Commission Public Notices prior to each meeting, meeting notifications to members of the “KS700MHZ” user group on a list server at Yahoo! Groups, notices sent through the Kansas Criminal Justice Information System (KCJIS) to public safety entities within the State of Kansas, email notification to county commissions, and newspaper articles. These notifications provided information to individuals wanting to participate in the development process of the upcoming meeting date, meeting time, location of the meeting, and the meeting purpose. Additionally, in an effort to solicit additional participation from interested parties across the State of Kansas the Region 16 (Kansas) RPC scheduled meetings every ninety days at different locations throughout the state of Kansas.

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The Region 16 (Kansas) RPC implemented two methods for obtaining comments and suggestions on the utilization of the 700 MHz frequency spectrum in the region, and the process implemented by the RPC to develop a Regional Communications Plan. One method for obtaining comments included the “KS700MHz” user group at Yahoo Groups on the World-Wide-Web. This user group would allow anyone to join and participate in the development of the Regional Communications Plan. The second process that was implemented to obtain comments included the use of the email address [ks700mhz@da.state.ks.us](mailto:ks700mhz@da.state.ks.us). Four committee members who were able to receive comments or questions from interested parties monitored this email address. These comments or questions could then be presented at the next meeting of the RPC for discussion.

In conclusion, the Region 16 (Kansas) RPC believes the public safety community has not had the necessary spectrum capacity to deploy dedicated wireless broadband facilities. The spectrum characteristics and bandwidth of the 4.9 GHz frequency spectrum will allow the public safety community to utilize the latest technological tools – through real time video displays, Internet access, and other applications – to protect and serve the citizens within Region 16 (Kansas) during emergency situations.

# **APPENDIX A**

## **Committee Membership**

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## **APPENDIX A**

### **Committee Membership**

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## **APPENDIX B**

### **County and City Data**

#### **COUNTY**

#### **CITY**

ALLEN COUNTY	
ANDERSON COUNTY	
ATCHISON COUNTY	
BARBER COUNTY	
BARTON COUNTY	
BOURBON COUNTY	
BROWN COUNTY	
BUTLER COUNTY	El Dorado
CHASE COUNTY	
CHAUTAUQUA COUNTY	
CHEROKEE COUNTY	
CHEYENNE COUNTY	
CLARK COUNTY	
CLAY COUNTY	
CLOUD COUNTY	
COFFEY COUNTY	
COMANCHE COUNTY	
COWLEY COUNTY	
CRAWFORD COUNTY	
DECATUR COUNTY	
DICKINSON COUNTY	
DONIPHAN COUNTY	
DOUGLAS COUNTY	Lawrence
EDWARDS COUNTY	
ELK COUNTY	
ELLIS COUNTY	Hays
ELLSWORTH COUNTY	
FINNEY COUNTY	Garden City
FORD COUNTY	
FRANKLIN COUNTY	
GEARY COUNTY	
GOVE COUNTY	
GRAHAM COUNTY	
GRANT COUNTY	
GRAY COUNTY	
GREELEY COUNTY	
GREENWOOD COUNTY	
HAMILTON COUNTY	
HARPER COUNTY	
HARVEY COUNTY	
HASKELL COUNTY	
HODGEMAN COUNTY	
JACKSON COUNTY	

## **APPENDIX B**

### **County and City Data**

JEFFERSON COUNTY	
JEWELL COUNTY	
JOHNSON COUNTY	Olathe
KEARNY COUNTY	
KINGMAN COUNTY	
KIOWA COUNTY	
LABETTE COUNTY	
LANE COUNTY	
LEAVENWORTH COUNTY	Leavenworth
LINCOLN COUNTY	
LINN COUNTY	
LOGAN COUNTY	
LYON COUNTY	
MARION COUNTY	
MARSHALL COUNTY	
MCPHERSON COUNTY	
MEADE COUNTY	
MIAMI COUNTY	
MITCHELL COUNTY	
MONTGOMERY COUNTY	
MORRIS COUNTY	
MORTON COUNTY	
NEMAHA COUNTY	
NEOSHO COUNTY	Chanute
NESS COUNTY	
NORTON COUNTY	
OSAGE COUNTY	
OSBORNE COUNTY	
OTTAWA COUNTY	
PAWNEE COUNTY	
PHILLIPS COUNTY	
POTTAWATOMIE COUNTY	
PRATT COUNTY	
RAWLINS COUNTY	
RENO COUNTY	Hutchinson
REPUBLIC COUNTY	
RICE COUNTY	
RILEY COUNTY	Manhattan
ROOKS COUNTY	
RUSH COUNTY	
RUSSELL COUNTY	
SALINE COUNTY	Salina
SCOTT COUNTY	
SEDGWICK COUNTY	Wichita
SEWARD COUNTY	
SHAWNEE COUNTY	Topeka



## **APPENDIX B**

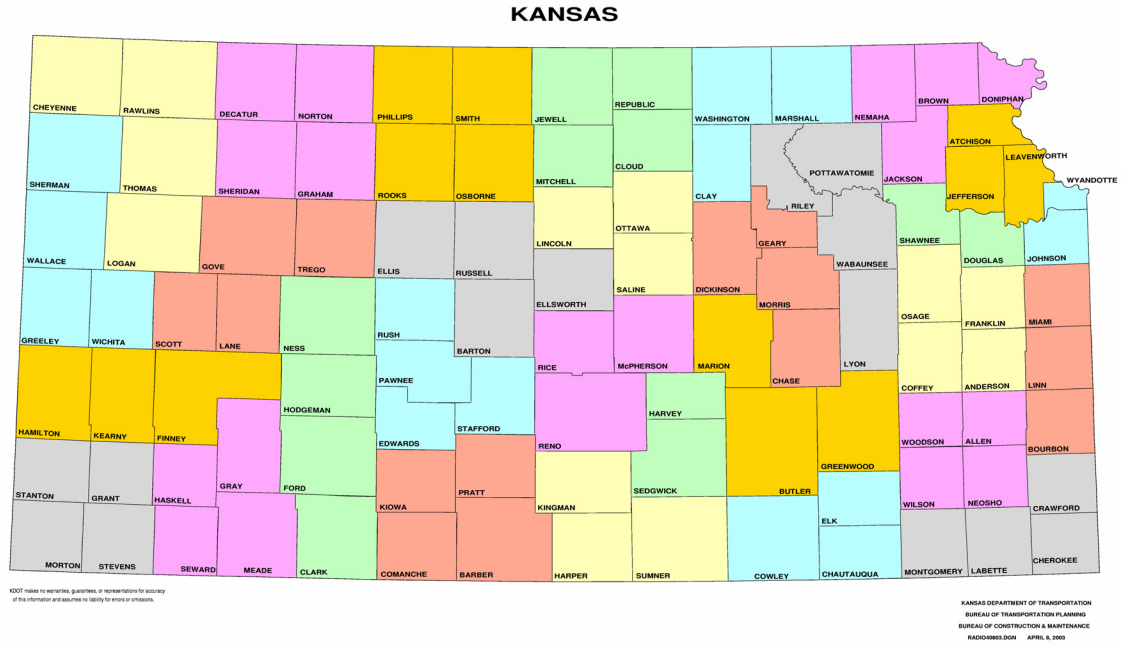
### **County and City Data**

SHERIDAN COUNTY  
SHERMAN COUNTY  
SMITH COUNTY  
STAFFORD COUNTY  
STANTON COUNTY  
STEVENS COUNTY  
SUMNER COUNTY  
THOMAS COUNTY  
TREGO COUNTY  
WABAUNSEE COUNTY  
WALLACE COUNTY  
WASHINGTON COUNTY  
WICHITA COUNTY  
WILSON COUNTY  
WOODSON COUNTY  
WYANDOTTE COUNTY

Kansas City, KS

# APPENDIX C

## Region 16 (Kansas)



# APPENDIX C

## Population Data

### Population of Kansas Counties

### 1990 and 2000 Census Data

County	1990	2000	Percent Change	Increase or Decrease
Allen	14,638	14,385	-1.7	-253
Anderson	7,803	8,110	3.9	307
Atchison	16,932	16,774	-0.9	-158
Barber	5,874	5,307	-9.7	-567
Barton	29,382	28,205	-4.0	-1,177
Bourbon	14,966	15,379	2.8	413
Brown	11,128	10,724	-3.6	-404
Butler	50,580	59,482	17.6	8,902
Chase	3,021	3,030	0.3	9
Chautauqua	4,407	4,359	-1.1	-48
Cherokee	21,374	22,605	5.8	1,231
Cheyenne	3,243	3,165	-2.4	-78
Clark	2,418	2,390	-1.2	-28
Clay	9,158	8,822	-3.7	-336
Cloud	11,023	10,268	-6.8	-755
Coffey	8,404	8,865	5.5	461
Comanche	2,313	1,967	-15.0	-346
Cowley	36,915	36,291	-1.7	-624
Crawford	35,582	38,242	7.5	2,660
Decatur	4,021	3,472	-13.7	-549
Dickinson	18,958	19,344	2.0	386
Doniphan	8,134	8,249	1.4	115
Douglas	81,798	99,962	22.2	18,164
Edwards	3,787	3,449	-8.9	-338
Elk	3,327	3,261	-2.0	-66
Ellis	26,004	27,507	5.8	1,503
Ellsworth	6,586	6,525	-0.9	-61
Finney	33,070	40,523	22.5	7,453
Ford	27,463	32,458	18.2	4,995
Franklin	21,994	24,784	12.7	2,790
Geary	30,453	27,947	-8.2	-2,506
Gove	3,231	3,068	-5.0	-163
Graham	3,543	2,946	-16.9	-597
Grant	7,159	7,909	10.5	750
Gray	5,396	5,904	9.4	508
Greeley	1,774	1,534	-13.5	-240
Greenwood	7,847	7,673	-2.2	-174
Hamilton	2,388	2,670	11.8	282
Harper	7,124	6,536	-8.3	-588
Harvey	31,028	32,869	5.9	1,841
Haskell	3,886	4,307	10.8	421
Hodgeman	2,177	2,085	-4.2	-92

## APPENDIX C

### Population Data

County	1990	2000	Change	Decrease
Jackson	11,525	12,657	9.8	1,132
Jefferson	15,905	18,426	15.9	2,521
Jewell	4,251	3,791	-10.8	-460
Johnson	355,021	451,086	27.1	96,065
Kearny	4,027	4,531	12.5	504
Kingman	8,292	8,673	4.6	381
Kiowa	3,660	3,278	-10.4	-382
Labette	23,693	22,835	-3.6	-858
Lane	2,375	2,155	-9.3	-220
Leavenworth	64,371	68,691	6.7	4,320
Lincoln	3,653	3,578	-2.1	-75
Linn	8,254	9,570	15.9	1,316
Logan	3,081	3,046	-1.1	-35
Lyon	34,732	35,935	3.5	1,203
McPherson	27,268	29,554	8.4	2,286
Marion	12,888	13,361	3.7	473
Marshall	11,705	10,965	-6.3	-740
Meade	4,247	4,631	9.0	384
Miami	23,466	28,351	20.8	4,885
Mitchell	7,203	6,932	-3.8	-271
Montgomery	38,816	36,252	-6.6	-2,564
Morris	6,198	6,104	-1.5	-94
Morton	3,480	3,496	0.5	16
Nemaha	10,446	10,717	2.6	271
Neosho	17,035	16,997	-0.2	-38
Ness	4,033	3,454	-14.4	-579
Norton	5,947	5,953	0.1	6
Osage	15,248	16,712	9.6	1,464
Osborne	4,867	4,452	-8.5	-415
Ottawa	5,634	6,163	9.4	529
Pawnee	7,555	7,233	-4.3	-322
Phillips	6,590	6,001	-8.9	-589
Pottawatomie	16,128	18,209	12.9	2,081
Pratt	9,702	9,647	-0.6	-55
Rawlins	3,404	2,966	-12.9	-438
Reno	62,389	64,790	3.8	2,401
Republic	6,482	5,835	-10.0	-647
Rice	10,610	10,761	1.4	151
Riley	67,139	62,843	-6.4	-4,296
Rooks	6,039	5,685	-5.9	-354
Rush	3,842	3,551	-7.6	-291
Russell	7,835	7,370	-5.9	-465
Saline	49,301	53,597	8.7	4,296
Scott	5,289	5,120	-3.2	-169
Sedgwick	403,662	452,869	12.2	49,207
Seward	18,743	22,510	20.1	3,767
Shawnee	160,976	169,871	5.5	8,895
Sheridan	3,043	2,813	-7.6	-230
Sherman	6,926	6,760	-2.4	-166
Smith	5,078	4,536	-10.7	-542
Stafford	5,365	4,789	-10.7	-576

## APPENDIX C

### Population Data

County	1990	2000	Change	Decrease
Stanton	2,333	2,406	3.1	73
Stevens	5,048	5,463	8.2	415
Sumner	25,841	25,946	0.4	105
Thomas	8,258	8,180	-0.9	-78
Trego	3,694	3,319	-10.2	-375
Wabaunsee	6,603	6,885	4.3	282
Wallace	1,821	1,749	-4.0	-72
Washington	7,073	6,483	-8.3	-590
Wichita	2,758	2,531	-8.2	-227
Wilson	10,289	10,332	0.4	43
Woodson	4,116	3,788	-8.0	-328
Wyandotte	162,026	157,882	-2.6	-4,144
<b>Kansas</b>	<b>2,477,588</b>	<b>2,688,418</b>	<b>8.5</b>	<b>210,830</b>

Source: U.S.  
Census Bureau,  
1990 CPH-L-79,  
2000 DP-1.